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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,034	11/29/2001	Johan David Van Der Tang	NL 000694	6805
24737	7590	03/29/2004	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS			CHANG, JOSEPH	
P.O. BOX 3001			ART UNIT	PAPER NUMBER
BRIARCLIFF MANOR, NY 10510			2817	

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/998,034	VAN DER TANG ET AL.
	Examiner Joseph Chang	Art Unit 2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5, 10, 11 and 20 is/are rejected.
- 7) Claim(s) 6-9 and 12-19 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 29 November 2001 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

The text of those sections of Title 35 U.S.C. Code not included in this action can be found in a prior Office action.

Claims 1- 5, 10, 11, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Chung-Yu et al.

Chung-Yu et al. discloses in figures 1-4 a multiphase LC oscillator comprising 2 units and each unit performs a phase shift of 90 degree (see Page IV-379, second column) and comprises a VI converter (INV1, INV2), an LC oscillation part (L1, C1 of Fig.1), and the multiphase LC oscillator supplies two outputs signal with a phase difference (I, Q).

Regarding claim 2, control means to adjust the phase shift (control voltage Vc shown in Fig.3 and Fig.4)

Regarding Claim 3, amplifiers in series with a compensation amplifier parallel (M1, M2 and M3).

Regarding Claim 4, a voltage-to-current converter (Fig.3) for use in a multiphase LC oscillator (inverter-type LC VCO) characterized in that the voltage-to-current converter comprises compensation means (control voltage Vc) to compensate for a phase shift.

Regarding Claim 5, a method to obtain multiphase signals with phase differences ("the constant-current voltage-controlled LC ring oscillator with quadrature outputs" IV 379 right column) 180 degree/N whereby N is at least 2 (90 degree), having the step of:

receiving an incoming signal (gate signal of M7), performing a phase shift of 90 degree (Q), performing the phase shift comprises: converting the incoming signal into a current signal having a phase shift (source current of M7 goes LC tank circuit and other path goes output Q), providing the current signal to an LC oscillator (L2,D3,D4,M5,M6) operable to generate a first output signal (+/- Q) and generating at least one additional output signal (+/- I) using the first output signal (feedback), and supplying the output signals with a phase difference (90).

Regarding Claims 11, 20, "parasitic resistor coupled in parallel" is inherently present in LC circuit because of intrinsic property of inductor and capacitor.

### ***Allowable Subject Matter***

Claims 6-9 and 12-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the best prior art of record, Chung-Yu Wu teaches an LC ring oscillator structure as recited in the claims. However, one of ordinary skill in the art would not have been motivated to have an integrator or differentiator couple between the amplifiers, as set forth in the claims.

### **Response to Arguments**

Applicant's arguments filed 9/2/03 have been fully considered but they are not persuasive.

Regarding applicant comments directed to the rejection of claims 1-5 under 35 U.S.C. 102(b) as being anticipated by Chung-Yu, Applicant states "Chung-Yu fails to anticipate a multiphase LC oscillator that includes multiple units where each unit includes a voltage-to-current converter and an LC oscillator. The Office Action relies on the differential inverter of Chung-Yu as anticipating the voltage-to current converter recited in Claim 1. However, Chung-Yu specifically recites that the differential inverters receive voltage signals as input and produce voltage signals as output. As a result, the differential inverters of Chung-Yu cannot anticipate the voltage-to-current converter recited in Claim 1." As applicant's comments "the differential inverters of Chung-Yu receive voltage signal as input and produce voltage signal as output", the differential inverters not only produce voltage signal as output but also produce current because M9 is a constant current source drawing current from M3,M4,M7, and M8.

Regarding Claim 4, applicant states "Chung-Yu explicitly states that the control voltage and bias resistor provide a reverse bias for a diode in the differential inverter. Chung-Yu lacks any mention of using the control voltage and bias resistor to compensate for a phase shift as recited in Claim 4." The control voltage and bias resistor provide a reverse bias for a diode that operate as a variable capacitor to compensate phase or frequency of the oscillator. The capacitance of the diode

(varactor) changes as the control voltage changes. The reverse bias for a diode is required for operation of variable capacitor (varactor).

Regarding the rejection under 35 USC 102(b) as being anticipated by Duncan et al., the rejection is withdrawn due to unnecessary multiple rejections.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Chang whose telephone number is 571 272-1759. The examiner can normally be reached on Mon-Fri 0700-1730.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JC  
3/9/04.



Robert Pascal  
Supervisory Patent Examiner  
Technology Center 2863